

The intertidal Turrids of Victoria

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Abstract

Descriptions are given of the various species of the gastropod molluscan family Turridae likely to be encountered in the intertidal region of Victorian shores. (*The Victorian Naturalist* 127 (6), 2010, 240–245)

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Introduction

The Turridae forms one of the largest of all molluscan families, there being as many as four thousand species world-wide and about four hundred recorded from Australian seas. A great percentage of these shells are found only in deep water and it is probable that there are a large number still to be described. The waters around the south-eastern Australian coastline are no exception and there are numerous species that have been collected in the last few years that await formal description and naming. Because of this, and also the fact that so many turrids are small, most being less than 15 mm in length, they are not at all well-known or represented in collections. For the same reasons, accuracy of identification is difficult to achieve for many collectors.

In general, Turrids (along with the Conidae and the Terebridae) are predatory molluscs, with a rapid-strike, chemically-aided system that paralyses their prey. Cones, with their venomous harpoons, are best known for this. However, a similar system is used by all the families in the Superfamily Conoidea (to which the turrids belong). An anterior elongation of the buccal tube and radula is modified to form large marginal teeth that are specialised for hypodermic injection. The shells are generally spindle-shaped with a large body whorl. The main shell character is the posterior 'turrid-notch' or sinus on the aperture — sometimes a deep slit on the outer lip, sometimes an obscure concavity. Size range is from 1 mm to about 160 mm in length. In Victoria, the biggest are about 35 mm long, the smallest 1 or 2 mm.

In 1993, a paper by Taylor, Kantor and Sysoev described work on the foregut anatomy of the Superfamily Conoidea, and assigned the group

to five different families. Further study by others has not been successful in replicating this work and so there is still not a general consensus regarding the family status of the turrids. For simplicity, this paper therefore retains the 'traditional' family and genera for the species described below.

Of the hundred or so taxa recorded from Victoria, relatively few live intertidally. A number of different species live below low tide level and dead specimens can sometimes be found in the sand at the water's edge. For those who have an interest in the turrids, the following are brief descriptions of species most likely to be found alive when collectors are fossicking on our rock platforms. Without exception these shells live at or near low tide level and below, and so are best searched for around the edge of the rock platforms, where they live under stones among the algae that grow there.

Etrema bicolor (Angas, 1871)

(Fig. 1)

Shell solid and very narrow. Whorls rounded, sculptured with radial ribs crossed by concentric narrow ridges, slightly nodulose at the points of intersection. Outer lip with a strong varix behind and denticulate within; the posterior sinus is not particularly prominent. Colour creamy, with the base of the body whorl chocolate brown. The apex and interior of the aperture are brown. Length 6–7 mm. Range: Port Jackson, NSW, Tasmania and westward to near Perth, Western Australia. In Victoria, the FNCV Marine Research Group has recorded it from Inverloch, San Remo and Torquay.



Fig. 1. *Etrema bicolor* Inverloch. Photo by Joan Hales.

***Etrema denseplicata* (Dunker, 1871)**

(Fig. 2)

Shell solid and comparatively broader than *E. bicolor*. Sculpture of strong axial ribs, about 18 on the body whorl, and quite strong spiral threads that override the ribs. Lip of the aperture thick, denticulate within; posterior sinus prominent. Colour fawn but living specimens purplish, occasionally white-banded; apex purple. Length about 13 mm, width 4-4.5 mm. Range: Tasmania, Bass Strait, central Victoria and into South Australia. Not uncommon in Western Port, particularly Flinders and Shoreham.

***Austrodrillia beraudiana* (Crosse, 1863)**

(Fig. 3)

Shell solid, with 6 mature whorls; sutures deeply impressed and sinuous. Sculpture of eight or nine thick rounded ribs which start a quarter of the way down the whorl; the ribs do not line up on adjacent whorls, and taper off towards the bottom of the body whorl. They are crossed by faint white spiral striations. The sinus is small and callused. Colour greyish brown with white knobs on the ribs. Interior of aperture purplish brown. Length 12-15 mm. Range: northern NSW to western Victoria and northern Tasmania. Probably the least uncommon of the family in Victoria, particularly in Western Port, but also recorded from Walkerville, Inverloch, Point Lonsdale, Aireys Inlet and Port Fairy.



Fig. 2. *Etrema denseplicata* off Cowes. Photo by Platon Vafiadis.



Fig. 3. *Austrodrillia beraudiana* Cat Bay, Phillip Island. Photo by Platon Vafiadis.

***Guraleus alucinans* (Sowerby, 1896)**

(Fig. 4)

Shell attenuate, with seven to eight angulate whorls. Sculptured with thick and rounded axial ribs and numerous close, fine spiral grooves. Body whorl less than equal in length to the spire and somewhat attenuated at the base; aperture fairly wide, with a small posterior sinus. Colour creamy white with interrupted thin spiral brown lines on the spire, a thicker line on and above the angle of the spire whorls and at

the centre of the body whorl. Length 6–10 mm. Range: Victoria, South Australia and probably Tasmania. In Victoria, it is found mainly in Western Port (various localities), Torquay, Clifton Springs and also Portland. There is considerable confusion with this species, considered by many workers to be a synonym of the next species, *G. pictus*, and also *G. vincentinus* (Crosse and Fischer 1865), a species that is also found in NSW.



Fig. 4. *Guraleus alucinans* Portland. Photo by Platon Vafiadis.

Guraleus pictus (Adams and Angas, 1864)
(Fig. 5)

Shell attenuate with sculpture of oblique axial ribs, eight per whorl, gradually fading out on the base of the last whorl; slightly angled at the upper third of the whorls. The axial ribs have wide interspaces covered with faint spiral striations. The aperture is equal to the spire length – comparatively longer than in typical *G. alucinans* (above); posterior sinus small. Colour creamy with a broad chocolate brown band beneath the shoulder. There is also a band of paler brown between the ribs immediately below the sutures. Length to about 17 mm. Range: southern Queensland to Victoria, Tasmania and central South Australia. Our records are from Inverloch, Shoreham, Point Nepean and Portland.



Fig. 5. *Guraleus pictus* Portland. Photo by Platon Vafiadis.

Paramontana rufozonata (Angas, 1877)
(Fig. 6)

Shell solid, with six convex whorls. Sculptured with axial ribs, crossed by transverse ridges that become sharply and prominently nodulose on the ribs. Outer lip with a varix and denticulated. Posterior sinus moderate. Colour white with a zone of double interrupted chestnut lines near the base of the last whorl and similar chestnut markings here and there on the upper portions of the whorls. Length 5 mm, width 1.5 mm. Range: central NSW to Victoria, Tasmania and west as far as the south of Western Australia. In Victoria, it is found at Port Albert, San Remo, McHaffie Point on Phillip Island, Portarlington, Port Fairy and Portland.



Fig. 6. *Paramontana rufozonata* Harmers Haven. Photo by Joan Hales.

Macteola anomala (Angas, 1877)

(Fig. 7)

Shell solid with five whorls, sharply angled at the upper part. Sculptured with rather distant axial ribs that are quite stout, rounded and nodulose at the angle in the whorls. There are also fine spiral ridges, which are seen to be delicately grained when viewed under a lens. The outer lip is gently curved and the columella has a callus; posterior sinus not at all prominent. Colour white with a brownish-orange band spotted with black encircling the last whorl and appearing just above the sutures on upper whorls. Length to 11 mm. Range: central NSW to Tasmania, Victoria and as far as South West Australia. This beautiful little shell is sometimes to be found living along the north shores of Bellarine Peninsula, Victoria.

Daphnella botanica Hedley, 1918

(Fig. 8)

Shell solid and contracted at the base. The apex, of up to three whorls, is beautifully reticulated with a diagonal lattice of fine threads. The six adult whorls are sculptured with numerous spirals, about 40 on the body whorl and 12 on the penultimate, with smaller threads between the larger ones. There are also small, sharp axials, about 80 per whorl and these override the spirals to form minute beads at the intersections. The aperture is half the length of the shell and has a narrow and deep notch. The columella has a thin callus. Colour buff with darker brown splashes. Length up to 20 mm. Range from central Queensland to Tasmania, Victoria, South Australia and as far as Western Australia. Occasionally recorded at Inverloch and San Remo, in Victoria.



Fig. 7. *Macteola anomala* Portarlington. Photo by Leon Altoff.



Fig. 8. *Daphnella botanica* Inverloch. Photo by Joan Hales.

Turrella morologus (Hedley, 1922)

(Fig. 9)

Shell thin and slender, the upper whorls with a sloping shoulder meeting a perpendicular periphery at a sharp angle. The major sculpture is of prominent longitudinal ridges, about 9 to 12 on the last whorl. Narrow spiral cords cross these ridges, latticing the spaces between them, with about 20 spirals on the last whorl. From 3 to 10 minute threads are packed between the cords; these spirals cover the whole shell and, under a lens, can be seen to be made up of strings of minute grains. The aperture is narrow, the sinus broad and shallow. Colour pale brown, length about 8 mm, width about 3 mm. The range is from southern NSW to central Victoria, generally in fairly deep water. Recorded from mud flats at about low tide level at Toora, Victoria.

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Reference

Taylor JD, Kantor YI and Sysoev AV (1993) Foregut Anatomy, Feeding Mechanisms, Relationships and Classification of the Conoidea (=Toxoglossa) (Gastropoda). *Bulletin of the British Museum (Natural History)* London Zoology Series 59 (2), 125-170.

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Fig. 9. *Turrella morologus* Toora. Photo by Leon Altoff.